Panasonic®

Portable Stereo Component CD System

RX-DT690

Operating Instructions

Before connecting, operating or adjusting this product, please read these instructions completely.

COMPACT disc DIGITAL AUDIO

GN

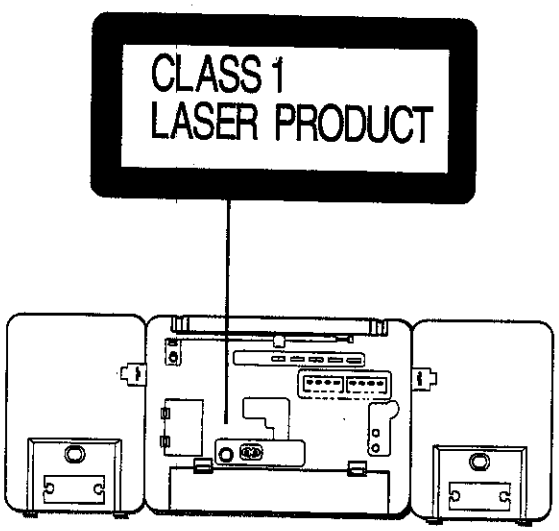
RQT2845-IB

Dear Customer

Thank you for purchasing this product.
For optimum performance and safety, please read these operating instructions carefully.

WARNING:
TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION!
THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.
DO NOT OPEN COVERS AND DO NOT REPAIR YOURSELF. REFER SERVICING TO QUALIFIED PERSONNEL.



DANGER	INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCK DEFEATED. AVOID DIRECT EXPOSURE TO BEAM.	(Inside of product)
ADVARSEL	USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.	(Indersiden af apparatet)
VARO!	AVATTAESSA JA SUOJALUKITUSIOHITETTAESSA OLET ALTTIINA NÄKYMÄTÖNTÄ LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.	(Tuotteen sisällä)
VARNING	OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.	(Apparatens insida)
ADVARSEL	USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES. UNNGÅ EKSPONERING FOR STRÅLEN.	(Produktets innside)
VORSICHT	UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET UND SICHERHEITSVERRIEGELUNG ÜBERBRÜCKT. NICHT DEM STRAHL AUSSETZEN.	(Im Inneren des Gerätes)

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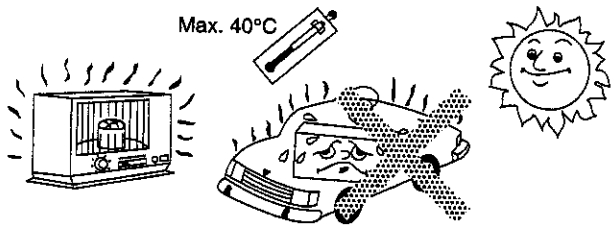
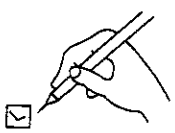
Precautions

- **If the set is not used for a long period of time or is used only from an AC power source, remove all the batteries to prevent potential damage due to possible battery leakage.**
- Avoid using or placing this unit near sources of heat. Do not leave it in an automobile exposed to direct sunlight for a long time with the doors and windows closed as this may deform the cabinet.
- Avoid cuts, scratches, or poor connections in the AC power cord, as they may result in possible fire or electric shock hazard. Also, excessive bending, pulling or splicing of the cord should be avoided.
- Do not unplug the AC power cord by pulling on the cord. To do so may cause premature failure or shock hazard.
- Do not operate the set on AC power in a bathroom, as a potential shock hazard may result.
- When not in use, disconnect the AC power cord from the household AC outlet.

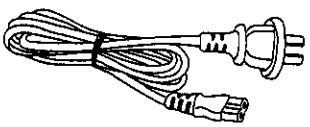


Supplied Accessories

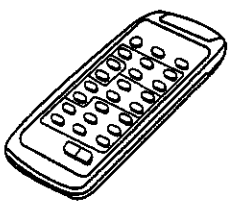


Please check and identify the supplied accessories.

☐ AC power cord ..... 1 pc.



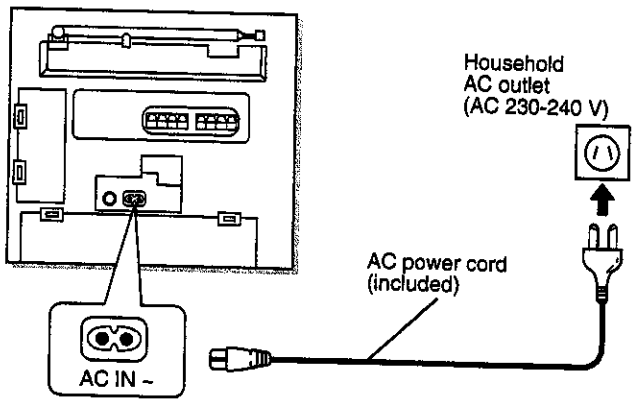
☐ Remote control transmitter ..... 1 pc.
(EUR643820)



Power Sources

To operate on AC power

Connect the included AC power cord to the AC IN~ socket of this unit and your household AC outlet.

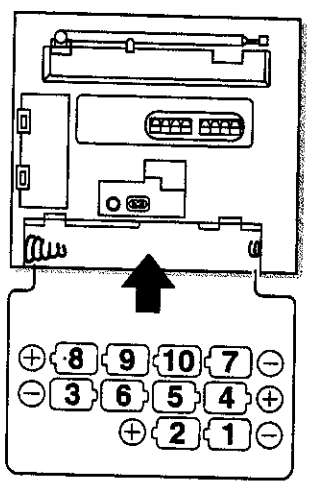


To operate on dry cell battery power

When using the memory back-up batteries (see the next page), insert them first.
Please read "Use of batteries" on page 6.

Battery installation

Unplug the AC power cord from the household AC outlet and the AC IN~ socket of the unit.
Open the compartment for the batteries and insert ten R20/LR20 (UM-1, not included) batteries into the battery compartment. Making sure that the batteries are installed in the designated numerical order and that the proper polarities are maintained.

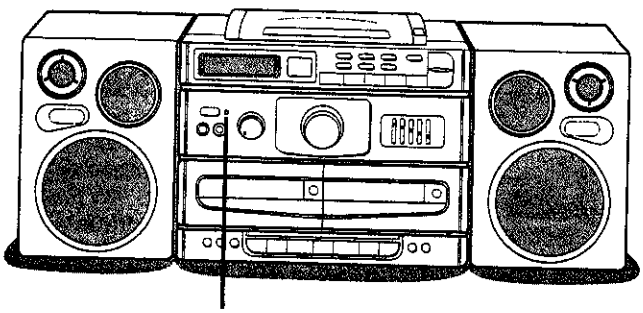


- Batteries installed with incorrect polarities may leak and damage this unit.
- Do not mix batteries (old and new) or types (manganese and alkaline, etc.).
- If the unit is not used for a long period of time or is used only from an AC power source, remove the batteries to prevent potential damage from possible battery leakage.

Power Sources

Battery life

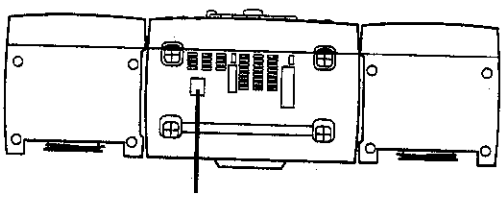
When the batteries are worn, "STANDBY⏻" indicator goes off (or dims) during play, or the indication on the display panel flashes. In this cases, replace all the batteries with new ones.



STANDBY⏻ indicator

Battery removal

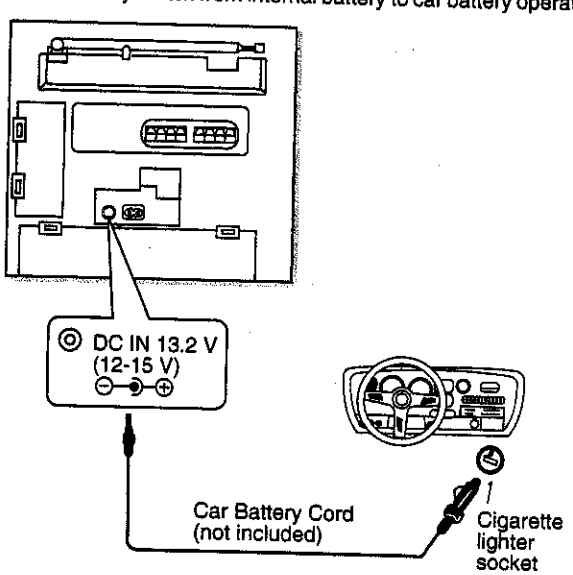
Remove as shown in the figure below.



Insert your finger into the opening and push the batteries out.

Car Battery Operation

1. Insert the plug of the car battery cord into the DC IN jack.
2. Plug the other end into the cigarette lighter socket in your car. Upon plugging the car battery cord into the DC IN jack, the unit will automatically switch from internal battery to car battery operation.

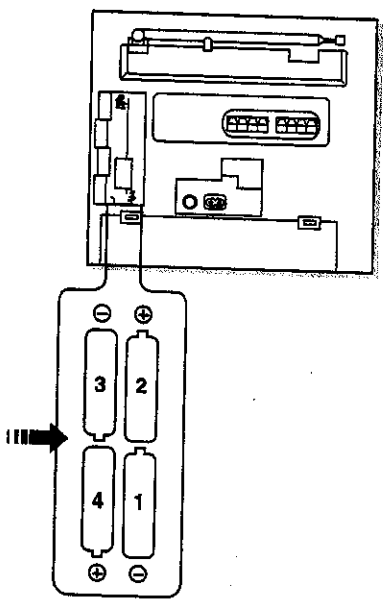


Memory back-up batteries

In the event of a power failure, or if the AC power cord is disconnected from the household AC power outlet (during AC operation), or should the batteries fail, the memory back-up batteries will preserve the preset memory and the timer functions of this unit. Please read "Use of batteries" on page 6.

Battery installation

Insert four R6/LR6 (UM-3 or equivalent, not included) batteries into the battery compartment, making sure that the batteries are installed in the designated numerical order that the proper polarities are maintained.



Battery removal

Press the ⊖ side of the battery No. 4.

Battery life

The life of the memory back-up batteries is about one year.

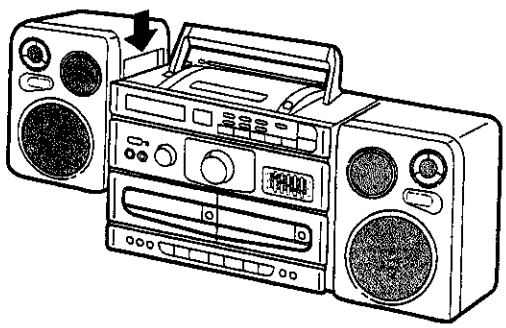
- The life of the memory back-up batteries can be prolonged by keeping the AC power cord plugged in the household power outlet at all times.
- When disconnecting the AC power cord, switch off the power first using the power button.
- The life of the memory back-up batteries is reduced if the AC power cord is disconnected from a household AC outlet with the power still supplied.
- While exchanging the memory back-up batteries, be sure to connect the AC power cord both to the unit and to the household AC outlet.

Connecting the Speaker System

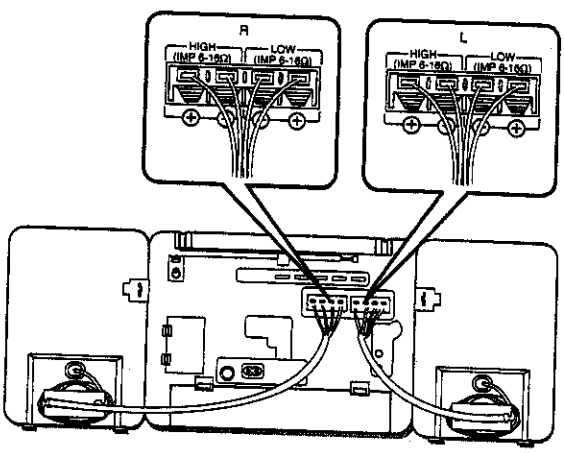
This unit can be used as a one-piece portable stereo system or a three-piece component system, by attaching or detaching the speaker system.
Before attaching or detaching the speakers, be sure to disconnect the speaker cables from the speaker terminals.
Be sure to press POWER to turn the unit off before connecting or disconnecting the speaker cables.

Attaching the speakers

1. Align the speaker with the main unit as shown in the figure, interlock the grooves and press down.



2. Connect the coloured speaker cables to the same coloured terminals.

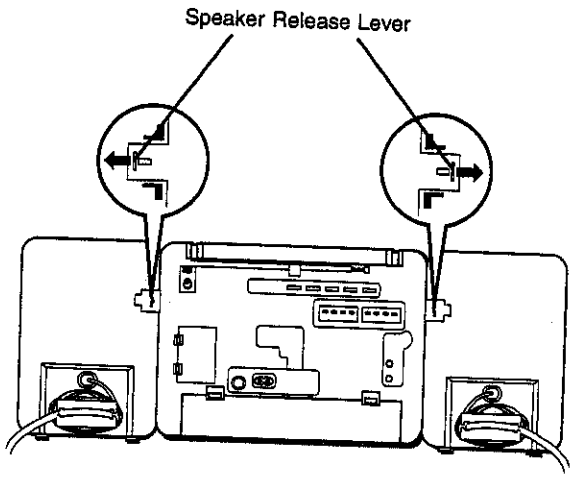


3. When using the unit with the speakers attached, wind the speaker cables as shown.

Note

Since a strong magnet is used for the speaker, keep magnetized commuter passes, tickets or personal credit cards, recorded tapes, watches, etc. away from the speaker. The speaker magnet in the speaker may damage them.

Detaching the speakers

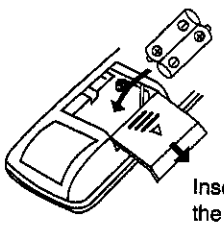


1. Unlock the speaker release levers by pulling them in the direction shown above, and slide each speaker up.
2. Connect the speaker cables to the speaker terminals.

Concerning the Remote Control

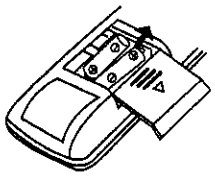
Battery installation

Insert two R03 (UM-4, not included) batteries as shown below.



Insert the batteries in the correct polarities (⊕, ⊖).

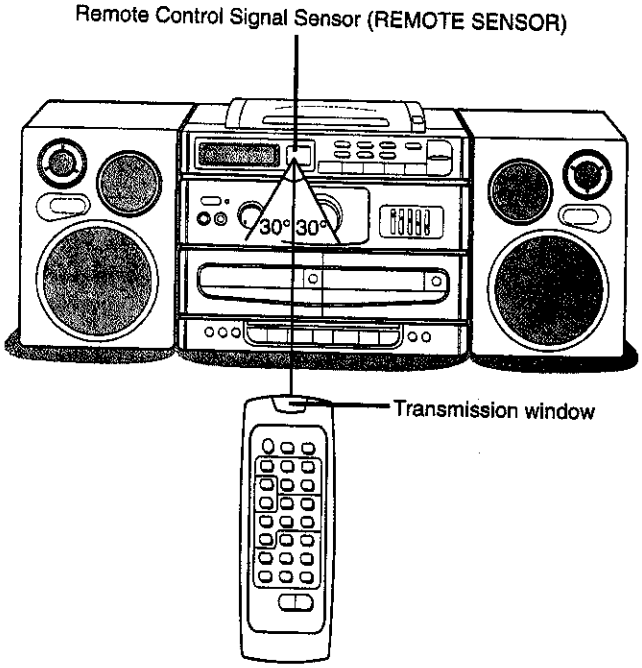
To remove the batteries, pull out the ⊕ side.



Use of batteries

- Do not mix old and new batteries, or batteries of different types (manganese with alkaline, etc.).
- Always remove old, weak or worn-out batteries promptly and dispose of them properly.
- Never subject batteries to excessive heat or flame; do not attempt to disassemble them; and be sure they are not short-circuited.
- If the unit is not to be used for a long period of time, remove the batteries and store them in a cool, dark place.
- If a battery leaks, remove all batteries and dispose of them properly.
- Thoroughly clean the battery compartment before inserting new batteries.
- If the electrolyte comes into contact with skin or clothes, flush with water immediately.
- Keep batteries out of reach of children.
- Do not use rechargeable (nickel-cadmium) type batteries.
- Do not attempt to recharge alkaline or manganese batteries.

Remote control unit's operation range



Face about 7 meters in front of the sensor.

How to use the remote control unit properly

- Do not place obstacles between the remote control signal sensor and remote control unit.
- Do not expose the remote control signal sensor to direct sunlight or to the bright light of an invertor fluorescent light.
- Take care by keeping the remote control signal sensor and the transmission window free from dust.

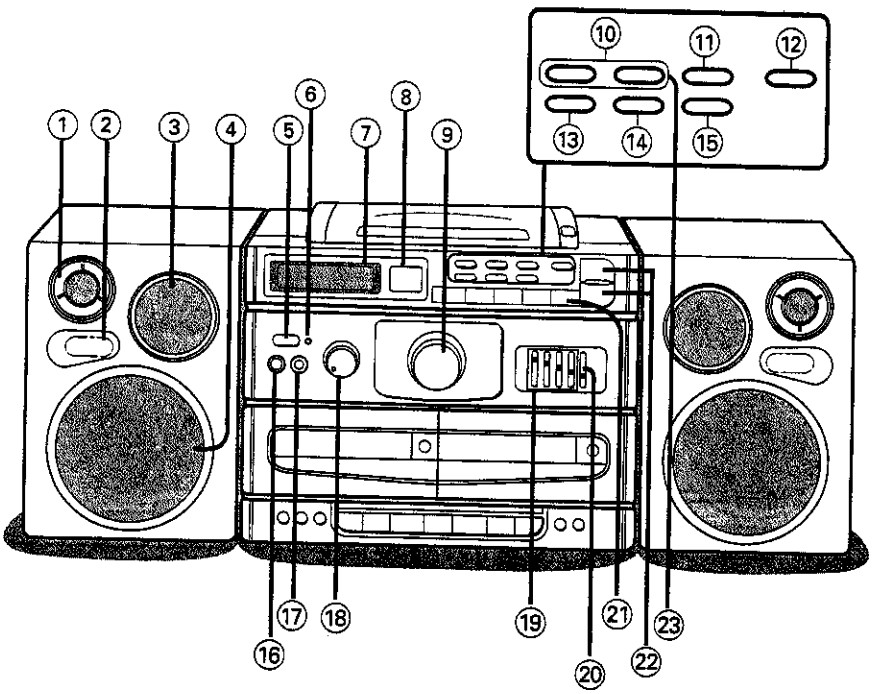
To prevent malfunctioning of the remote control unit:

- Do not disassemble or reconstruct the unit.
- Do not place heavy objects on top of it.
- Do not leave it where it will be exposed to direct sunlight.
- Do not spill beverages or other liquids over it.

Battery life

The battery life is about one year.
Although the battery life varies depending on how often the device is used, the batteries should be replaced about once every year on the average.
The batteries should be replaced if commands from the remote control transmitter do not operate the unit even when transmitter is held close to the front panel.

Location of Controls

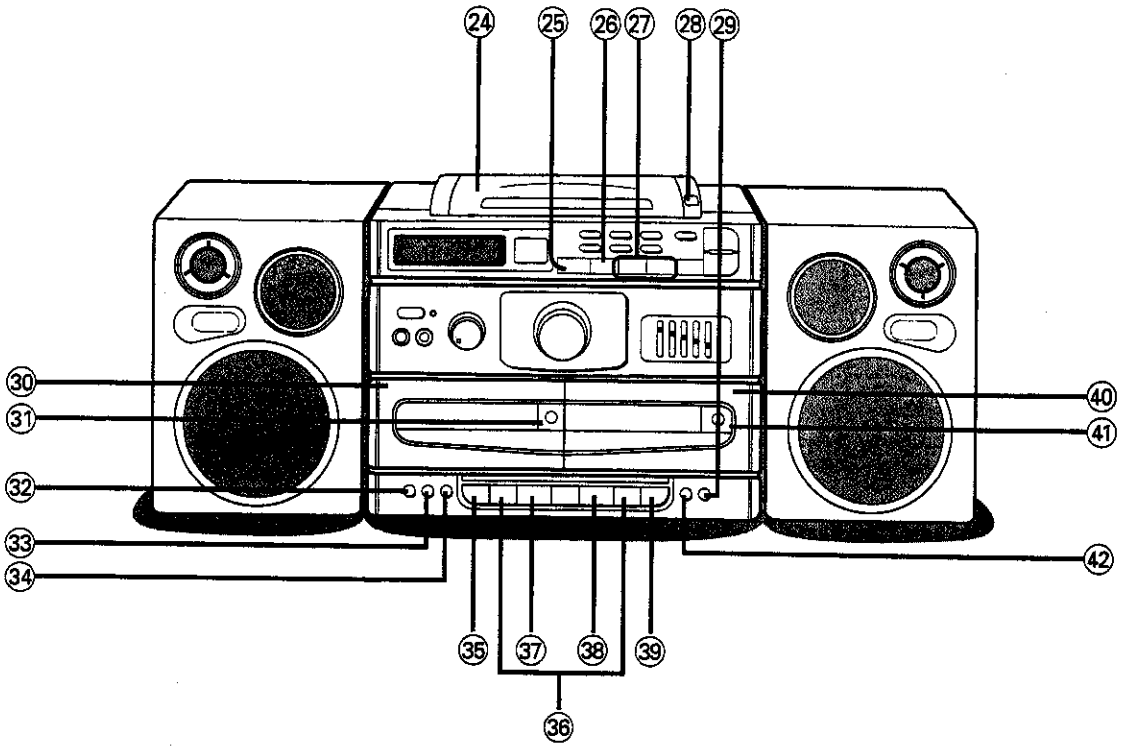


Basic controls

No.	Name	Ref. page
①	Speakers (Tweeter)	
②	Bass reflex ports	
③	Speakers (Squawker)	
④	Speakers (Woofer)	
⑤	Power "STANDBY ⏻" switch ([POWER] STANDBY ⏻) Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.	9
⑥	STANDBY indicator (STANDBY ⏻) When the unit is connected to the AC mains supply, this indicator lights up in standby mode and goes out when the unit is turned on.	9
⑦	Display panel	11
⑧	Remote control signal sensor (REMOTE SENSOR)	6
⑨	Volume control knob (VOLUME)	10
⑩	Time search buttons (–/TUNING/TIME SEARCH/+)	11
⑪	Timer set button (TIMER)	27
⑫	FM mode/beat proof button (FM MODE/B.P)	13, 21
⑬	Time check button (TIME CHECK)	11, 28
⑭	Memory/time adjust button (MEMORY/ADJUST)	11
⑮	Sleep timer button (SLEEP)	30
⑯	Headphones jack (PHONES)	10
⑰	Mixing microphone jack (MIX.MIC)	25
⑱	Super extra bass system control (S-XBS LEVEL)	10
⑲	Graphic equalizer controls (GRAPHIC EQUALIZER)	10
⑳	Balance control (BALANCE)	10

Tuner controls

No.	Name	Ref. page
㉑	Band selector button ([BAND])	12
㉒	Preset tuning button ([∧] PRESET TUNING [∨])	13
㉓	Tuning buttons (–/TUNING/TIME SEARCH/+)	12



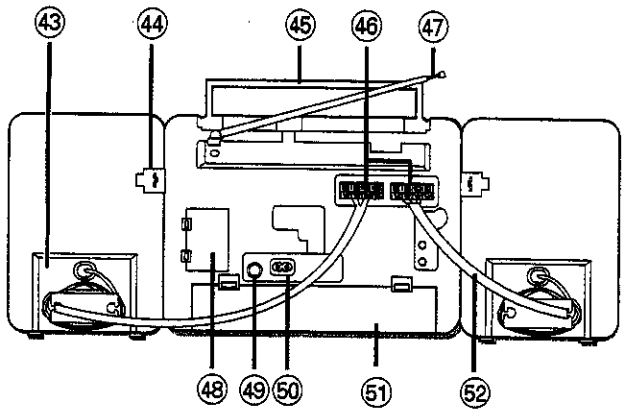
CD controls

No.	*Name*	*Ref. page*
24	CD lid	14
25	Play/pause button (▶/II)	14
26	Stop/clear button (■/CLEAR)	14
27	Skip/search buttons (I◀◀, ▶▶I)	15, 17
28	CD lid open button (⏏)	14
29	Easy CD recording button (EASY CD REC)	22

Deck controls

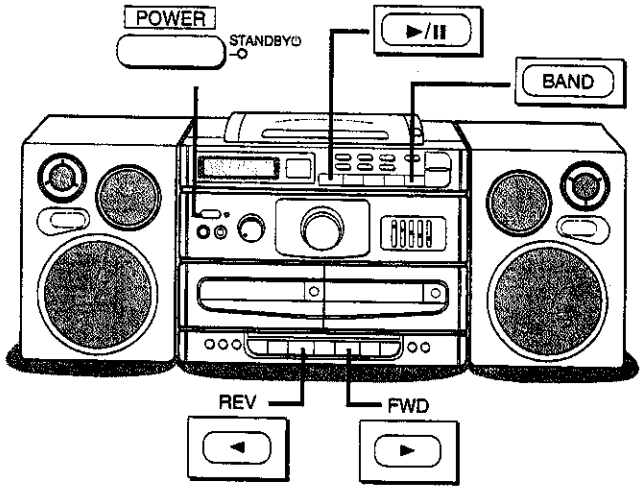
No.	*Name*	*Ref. page*
30	Deck 1 cassette holder (DECK 1)	18
31	Deck 1 cassette eject button (⏏)	18
32	Edit recording button (TAPE EDIT)	24
33	Reverse mode select button (REVERSE MODE)	18
34	Counter reset button (COUNTER RESET)	18
35	Deck 1 or Deck 2 selector button (DECK SELECT 1/2)	19
36	Fast-forward/rewind/tape program sensor (TPS) (TPS ◀◀, ▶▶ TPS)	20
37	Reverse-side playback button (REV◀)	18
38	Forward-side playback button (FWD▶)	18
39	Stop button (STOP ■)	18
40	Deck 2 cassette holder (DECK 2)	19
41	Deck 2 cassette eject button (⏏)	19
42	Record pause button (●II)	21

Common Operations

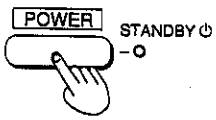


Rear panel controls

No.	Name	Ref. page
43	Speaker cable compartments	5
44	Speaker release levers (RELEASE)	5
45	Handle	
46	Speaker terminals	5
47	Telescopic antenna	13
48	Memory back-up battery compartment cover	4
49	DC input jack (DC IN 13.2V)	4
50	AC socket (AC IN~)	3
51	Battery compartment cover	3
52	Speaker cables	5



Turning the unit ON/OFF



To turn the unit ON:
Press POWER.
The backlight of the display comes on.

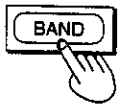
To turn the unit OFF:
Press POWER.
When using an AC power, the unit is turned to standby mode. (STANDBY ⏻ indicator lights)

Easy Listening

(Only when a household AC outlet is used for this unit)

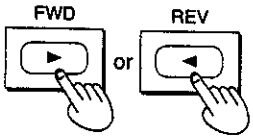
When a CD or tape is inserted, you can start play directly by pressing a single button (even in the unit off mode).

Listening to Radio



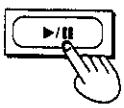
Press BAND or PRESET TUNING.

Listening to Tapes



Press FWD ► or REV ◄.

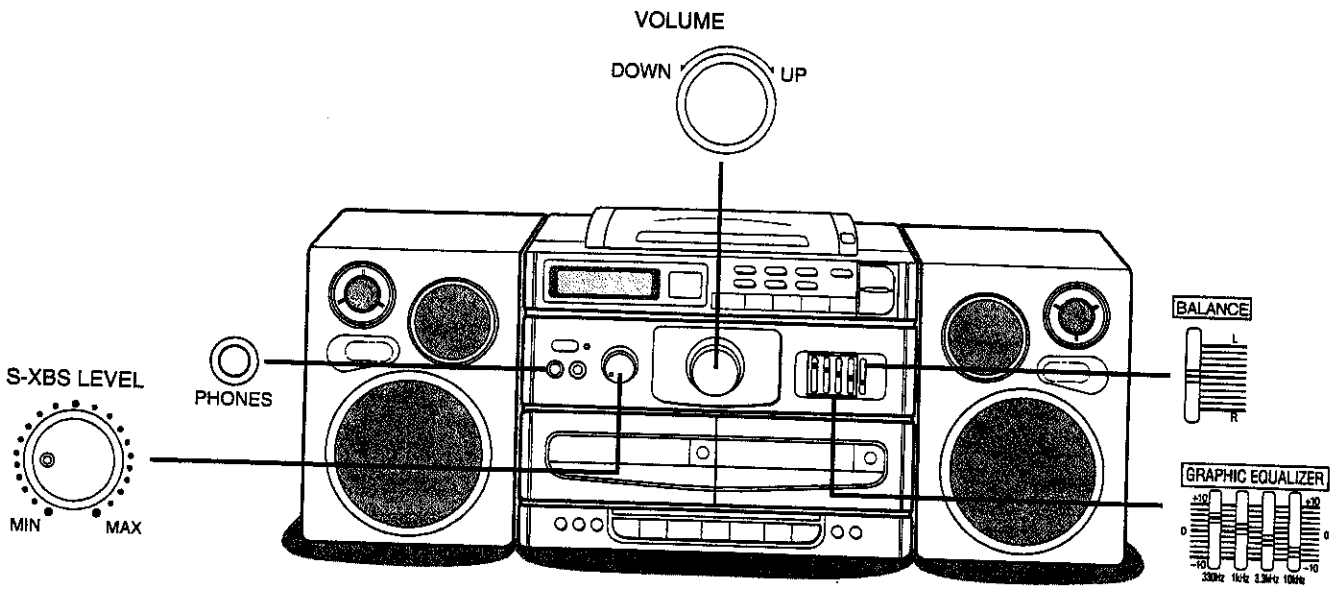
Listening to CDs



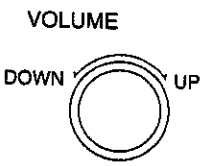
Press ►/II.

For your reference

- You can play directly by pressing the same button on the remote control transmitter.
- Even when the unit is being powered by batteries, you can start play directly by pressing the single button (mentioned above) after turning on the unit.



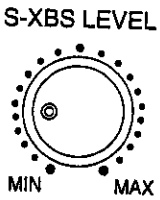
Adjusting the volume



Turn VOLUME to adjust the volume to the desired level.

Turn it clockwise to increase the volume.
Turn it counter clockwise to decrease the volume.

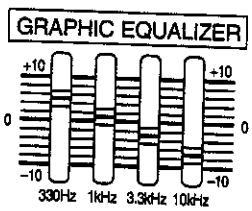
Adjusting the super extra bass (S-XBS)



Turn S-XBS LEVEL to adjust the extra bass to the desired level.

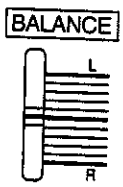
Turn it clockwise to increase the extra bass.
Turn it counter clockwise to reduce the extra bass.

Adjusting the graphic equalizer control



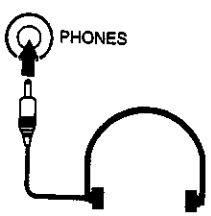
Adjust the graphic equalizer controls to the desired settings.

Adjusting the balance control



Adjust the balance of sound heard from the left and right.

Listening through headphones (not included)

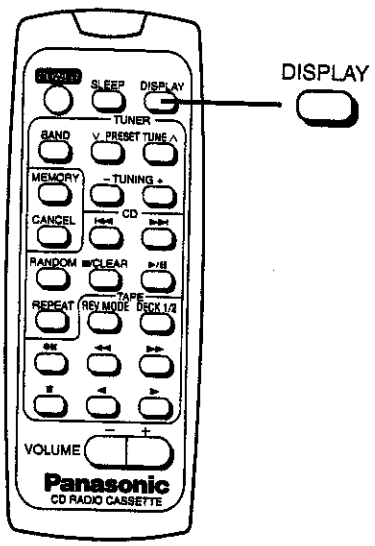


Turn down the volume and connect the headphones to the PHONES jack.

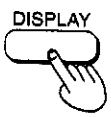
Plug type: Stereo mini (plug type: mini)
Avoid listening for prolonged periods of time to prevent hearing damage.

Setting the Clock

Displaying the present time or the tape counter



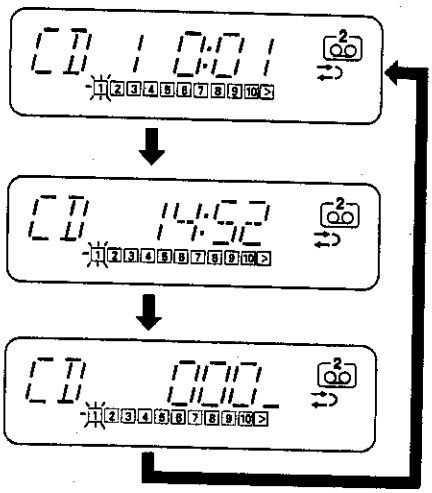
This operation comes in handy to check the present time during play or to check the tape counter during recording.
(Available only from the remote control)



Press DISPLAY.
Each time the button is pressed, the display will change as follows:

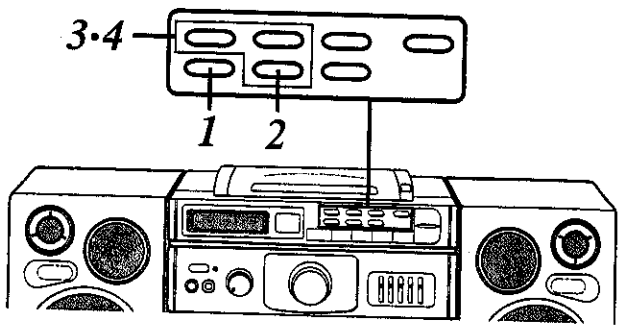
Example: When DISPLAY is pressed during CD play;

1. The play status is indicated.
2. The present time is indicated.
3. Tape counter display is indicated.



"----" appears for the tape counter display when no tape has been loaded.

The clock has a 24-hour display.
You can set the clock even in the unit off mode (only when using AC power).



Example: Setting the clock to 16:20;
Preparation: Press POWER.

1

Press TIME CHECK to display the present time.
Timer ON/OFF times
Original display ← **Present time**

(The display changes each time the button is pressed.)

2

Press MEMORY/ADJUST.

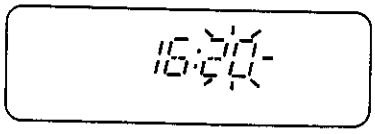
3

Press –/TUNING/TIME SEARCH/+ to display the hour (16).

Press MEMORY/ADJUST.

4

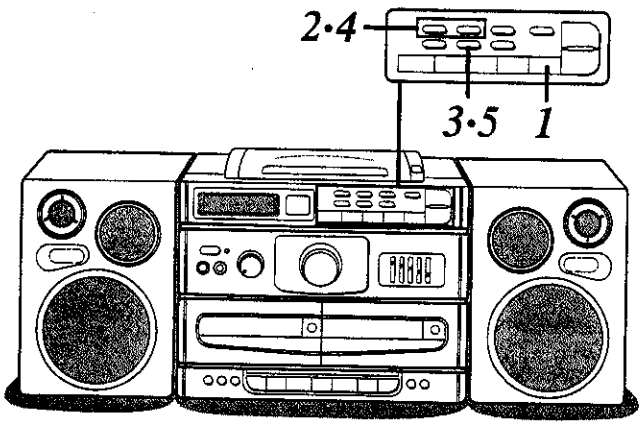
Press –/TUNING/TIME SEARCH/+ to display the minute (20).

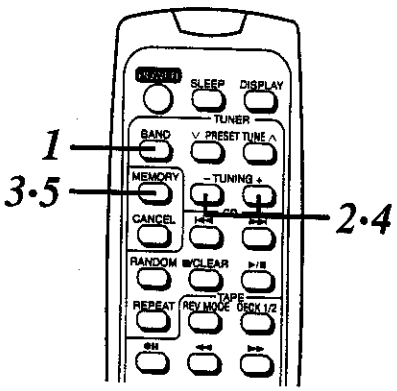


Press MEMORY/ADJUST.
(The clock now starts operating, and the display returns to its original status.)

Programming Broadcast Stations

Once broadcast stations have been programmed, they can easily be tuned in at the touch of a button on the unit or on the remote control. Up to ten FM and AM stations each can be programmed.





Example: Programming FM 88.1 MHz in preset channel 2;

1

Press BAND to display "FM".

AM → FM

(The display changes each time the button is pressed.)

2

Press –/TUNING/TIME SEARCH/+ to select the station.

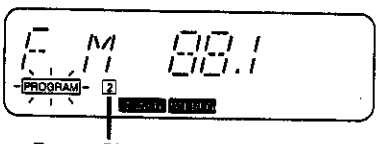
FM stations can be selected automatically (see the right).

3

Press MEMORY/ADJUST.

4

Press –/TUNING/TIME SEARCH/+ to display the preset channel in which the station is to be programmed.



Preset Channel

5

While PROGRAM is flashing, press MEMORY/ADJUST.

6 **Repeat steps 2 to 5 to program the other stations.**

Selecting FM stations automatically:

Keep pressing –/TUNING/TIME SEARCH/+ until the frequency display starts to change. A station with good reception is automatically selected and the selection process then stops.

To stop the selection at any time:

Press –/TUNING/TIME SEARCH/+ again.

The selection may stop without tuning into any station if there is interference in the vicinity. In such a case, tap –/TUNING/TIME SEARCH/+ until a station's frequency is picked up.

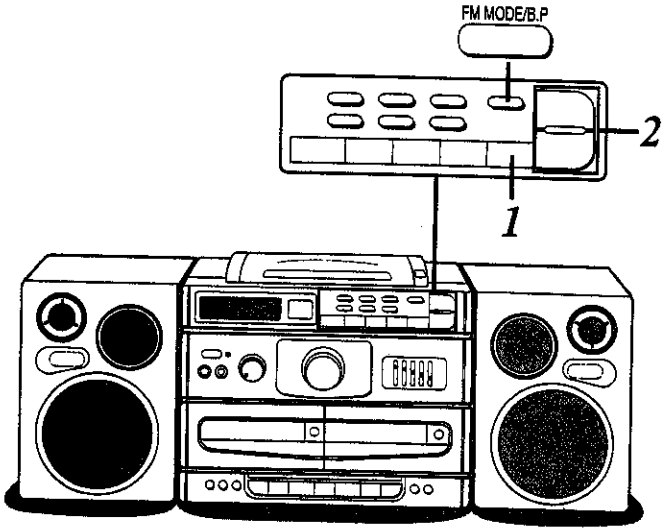
Programming AM stations:

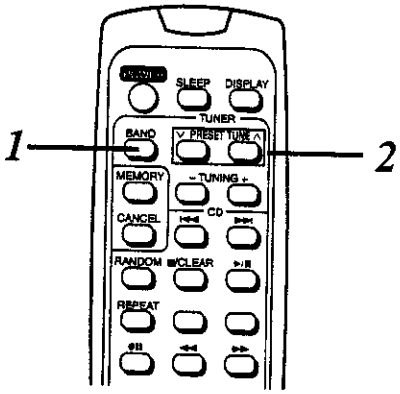
1. Press BAND in step 1 to display AM.
2. Perform steps 2 to 5.

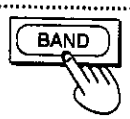
Listening to Radio Broadcasts

Preset tuning

Make sure you have completed the procedure for "Programming Broadcast Stations" (See page 12.) beforehand.
To listen to a station without programming it first, refer to "Listening to broadcast stations which have not been programmed" (See page 14).

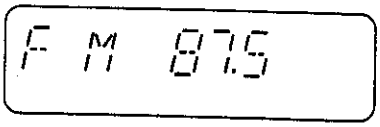


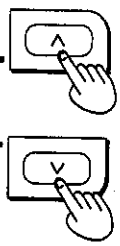


1 

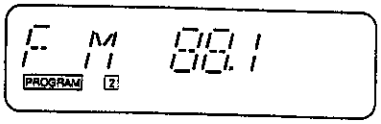
Press (BAND) to display "FM" or "AM".
AM → FM

(The display changes each time the button is pressed.)



2 PRESET TUNING 

Press PRESET TUNING to select the preset channel.
The station is changed each time the button is pressed.

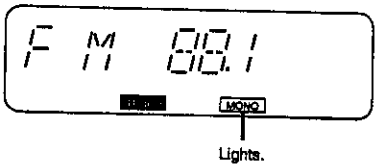


For better reception

When there is too much interference during a FM stereo broadcast

(Available only from main unit)
Reduce the interference by setting the sound to monaural.

Press FM MODE/B.P.



To return to stereo reception, repeat the same procedure and turn off the MONO display.

Note

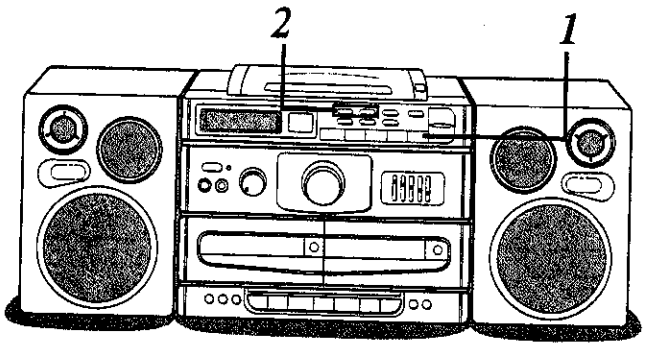
The STEREO display will not light in the monaural mode even when a stereo broadcast is received.

Adjusting the antenna for better reception

FM
Pull out the telescopic antenna and adjust its length and angle for optimum reception.

AM
Turn the unit in the direction which gives the best results.

Listening to Radio Broadcasts



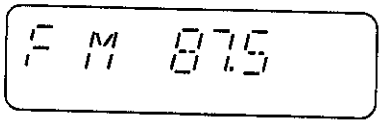
Listening to broadcast stations which have not been programmed (Manual tuning)

1 BAND

Press (BAND) to display "FM" or "AM".

AM → FM

(The display changes each time the button is pressed.)



2

–/TUNING/TIME SEARCH/+

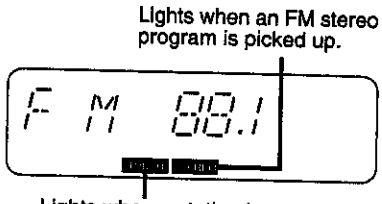
Press –/TUNING/TIME SEARCH/+ to tune in the broadcast station.

Press this to increase the broadcast frequency.

–/TUNING/TIME SEARCH/+

Press this to decrease the broadcast frequency.

FM stations can be selected automatically (see page 12.)

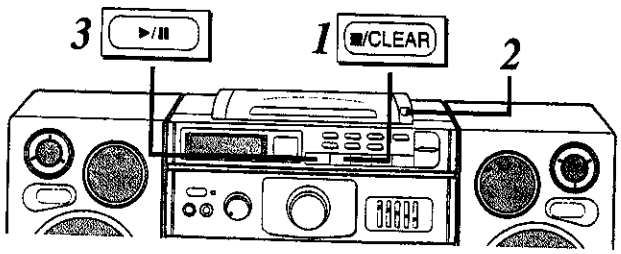


Note

Pressing (BAND) on the main unit or remote control will automatically turn the unit on and receive the broadcast which was previously tuned (only when AC power is supplied).

Frequency display steps:
The frequency display changes in the following steps:
FM: 100 kHz steps
AM: 9 kHz steps

Listening to CD



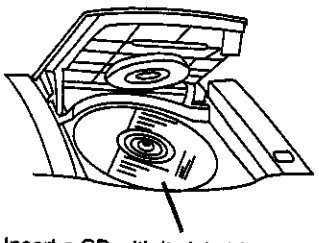
1 ■/CLEAR

Press (■/CLEAR).

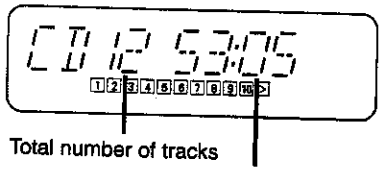
"NO DISC" appears on the display.

2 ▲

Press ▲ to open the CD lid, insert the CD then close the lid.



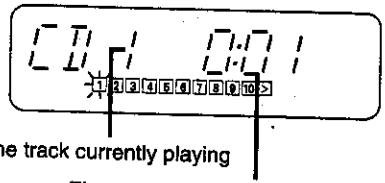
Insert a CD with its label facing up.



3 ▶/II

Press (▶/II) to start play.

Play now starts in sequence from track 1 to the last track, after which it will stop automatically.



■/CLEAR

To stop play:
Press (■/CLEAR).

▶/II

To stop play temporarily:
Press (▶/II).
The elapsed play time indication flashes.

To resume play:
Press (▶/II) again.

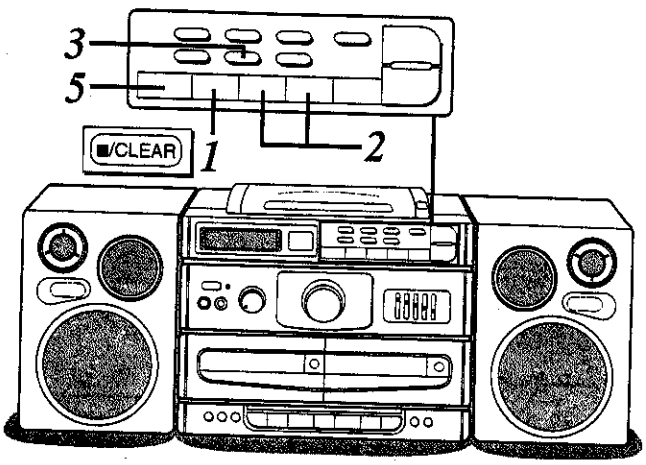
Note

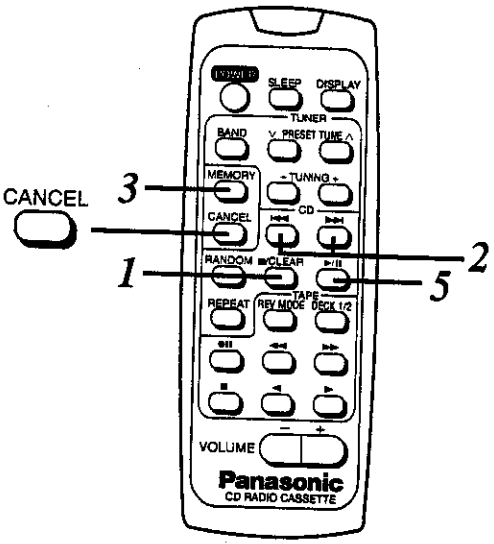
Interference may affect radio or TV reception when CDs are played close to a radio or TV set. If this occurs, place the unit as far away from the set as possible.

When "[>]" appears on the display:
It indicates there are 11 or more tracks on the disc at the playing position.

Selecting and listening to your favourite tracks (Program play)

Up to 36 tracks can be programmed.

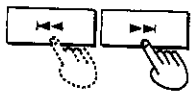




Example: Selecting tracks 2, 5 then 7;

1

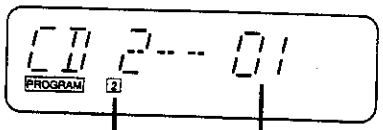
Press ■/CLEAR.

2 

Press ⏮ or ⏭ to select the desired tracks.

3 MEMORY/ADJUST

Press MEMORY/ADJUST.

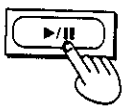


Programmed track

Play sequence

Play time of programmed track 2.

4 **Repeat steps 2 and 3, to select tracks 5 and 7.**

5 

Press ▶/II to start play.
The programmed tracks are played in the programmed sequence, and play stops automatically.

When a track has been programmed in error:
(Available only from the remote control)
Press CANCEL in the stop mode.
Each time the button is pressed, the track programmed last is cancelled.

To clear program play:

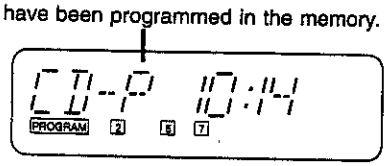
Press ■/CLEAR in the stop mode.

When "FULL" appears on the display:
The number of programmed tracks has exceeded 36. No more tracks can be programmed.

When "–:–" appears on the display:
The total play time of the programmed tracks has exceeded 120 minutes. However, programming and play are still possible.

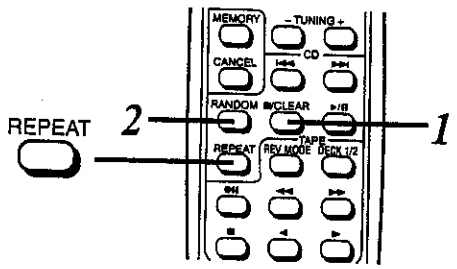
Memory retention of programmed tracks:
The contents of the memory will be retained even if play is stopped or if the power is turned off before its completion.

This appears when tracks have been programmed in the memory.



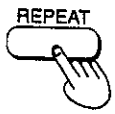
To check what has been programmed:
Press I◄◄ or ►►I while above display appears.
Each time this button is pressed, the number of the track and the play sequence can be checked.

The program is erased in the following circumstances:
- When ≜ has been pressed to open the CD lid.
- When the AC power cord is disconnected or the batteries are removed without inserting memory back-up batteries beforehand.

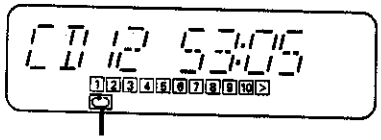


To repeat tracks (Repeat)

(Available only from the remote control)



Before play or during play:
Press REPEAT.



Lights

To cancel repeat play:
Press REPEAT again to turn ⟲ indicator off.

For your reference:
- In program play (see page 15), the unit plays only the programmed tracks in the programmed sequence repeatedly.
- You can enjoy the same track over and over by programming only one track.
- When program play is cancelled, the repeat mode is also deleted.

Playing selections in random order (Random play)

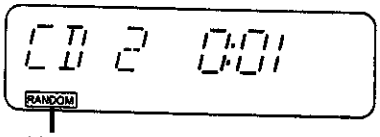
(Available only from the remote control)
This function automatically selects a sequence of tracks to be played in random order.

1

Press ■/CLEAR.

2

Press RANDOM.



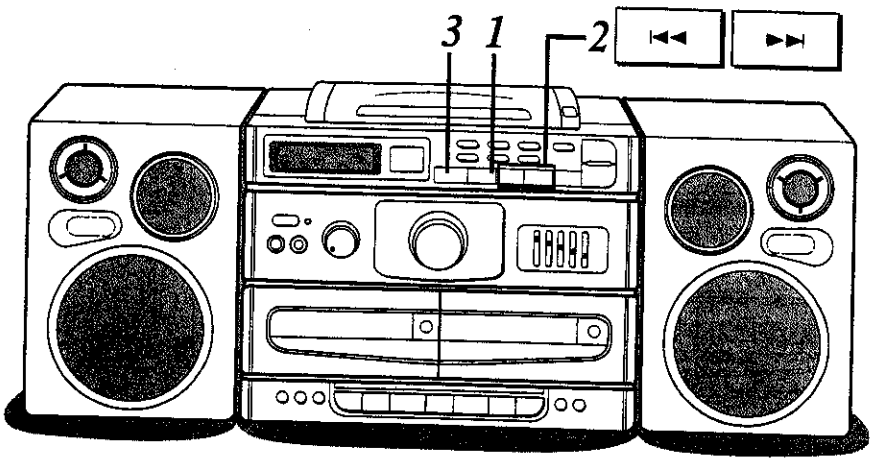
Lights

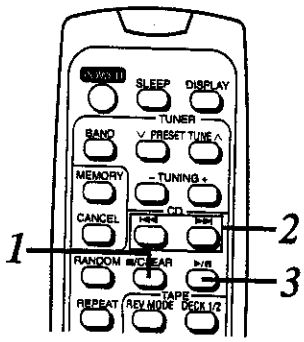
All the tracks are played at random, and play automatically stops.

To cancel random play:
Press ■/CLEAR to turn RANDOM indicator off.

Note

Random play with the programmed tracks is not possible.



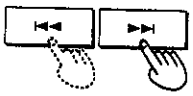


Starting CD play from a desired track (Direct play)

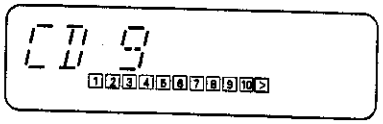
Example: Starting disc play from track 9;

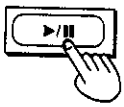
1

Press (■/CLEAR).

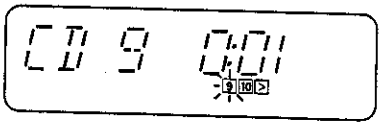
2 

Press ⏮ or ⏭ to display desired track number 9.



3 

Press (►/II) to start play.



All the tracks starting from the track selected to the last track, are played in sequence, and play automatically stops.

To skip tracks

Press ⏭ to skip ahead to the start of the next track.

Press ⏮ to skip back to the start of the current track.

By repeating this operation, you can skip tracks in the number that corresponds to the number of times you pressed the button.

Note

In random play (See page 16), you cannot skip to the beginning of the track that has been already played.

For your reference:

In program play (see page 15), you can skip forward and backward in the programmed sequence.

To search forward or backward

During play:

Keep pressing ⏭ to advance the disc play rapidly.

Keep pressing ⏮ to review disc play rapidly.

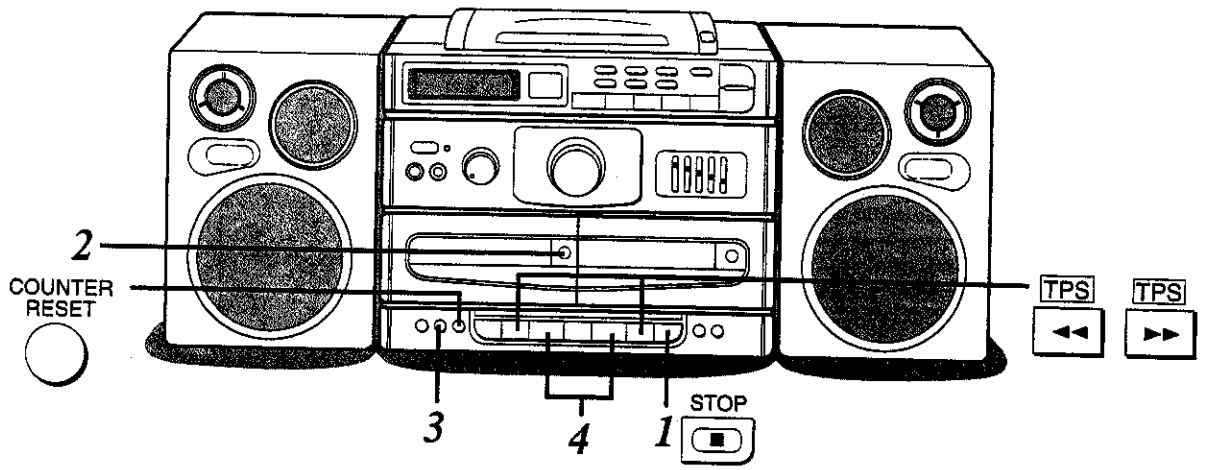
Release the button when the desired position on the disc is reached.

For your reference:

During program play (see page 15) and random play (see page 16), search will only take place within the track in play.

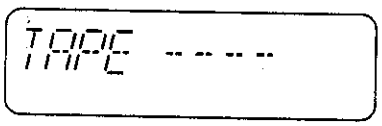
Listening to Tapes

You can use either deck 1 or deck 2 for tape playback by following the same steps. (This page shows an example using deck 1.)



1 STOP

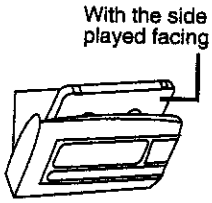
Press STOP (■).



2

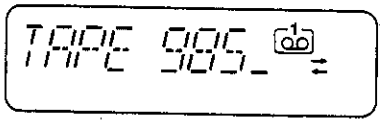
Press (⏏) button, insert the tape and close the cassette holder.

With the side to be played facing you.



3 REVERSE MODE

Press REVERSE MODE to select the reverse mode (see right.)



4 FWD

Press FWD (▶) or REV (◀).

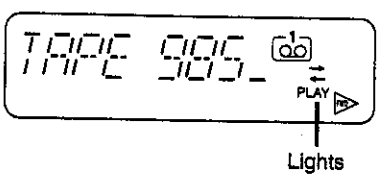
Playback now starts.

While ▶ is displayed, the forward side is played back.

While ◀ is displayed, the reverse side is played back.

OR

REV



Lights

STOP

To stop play:

Press STOP (■).

TPS ◀◀ or TPS ▶▶

To rewind or fast forward the tape while the tape is in the stop mode:

Press TPS ◀◀ or TPS ▶▶.

COUNTER RESET

To reset the tape counter to "000":

Press COUNTER RESET.

Types of tape which can be used:

Normal/TYPE I	○
CrO_2/TYPE II	○
Metal/TYPE IV	○

Selecting the reverse mode

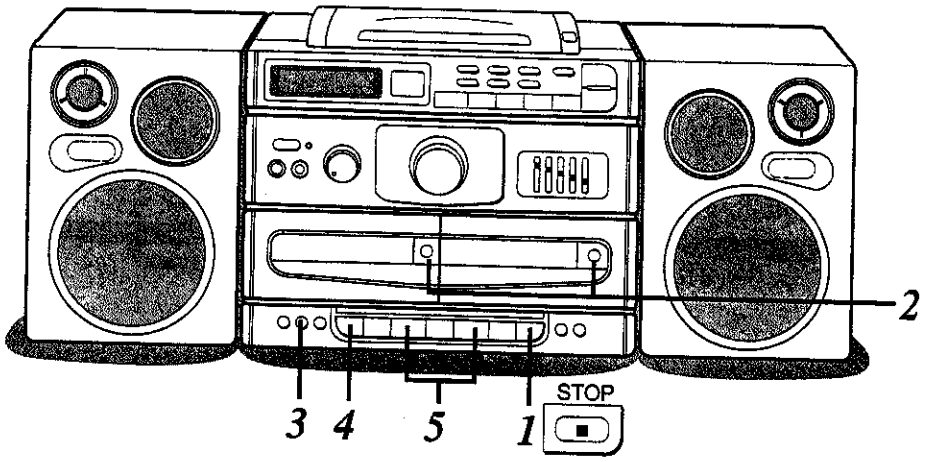
Each time you press REVERSE MODE, one of the indicators will light up.

⇄ : The deck plays one side only, and then stops automatically.

⇄) : The deck plays both sides and then stops automatically.

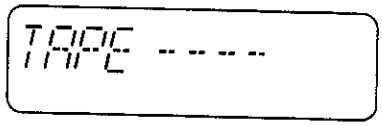
(⇄) : The tape plays repeatly until the STOP (■) is pressed. When you load tapes into both decks; sequential playback will be made. (See page 19)

Listening to two tapes consecutively



1 STOP

Press STOP ■.



2

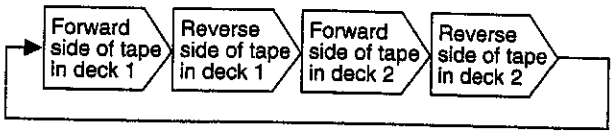
Press ⏏ insert the tapes and close the cassette holders.

3 REVERSE MODE

Press REVERSE MODE to set the ⇄ mode.

The two tapes will play back as follows:

- You can also start playback from a position other than the forward side of the tape in deck 1. Press DECK SELECT 1/2 and/or the opposite playback button.



4 DECK SELECT 1/2

Press DECK SELECT 1/2 to select DECK 1.

5 FWD

or

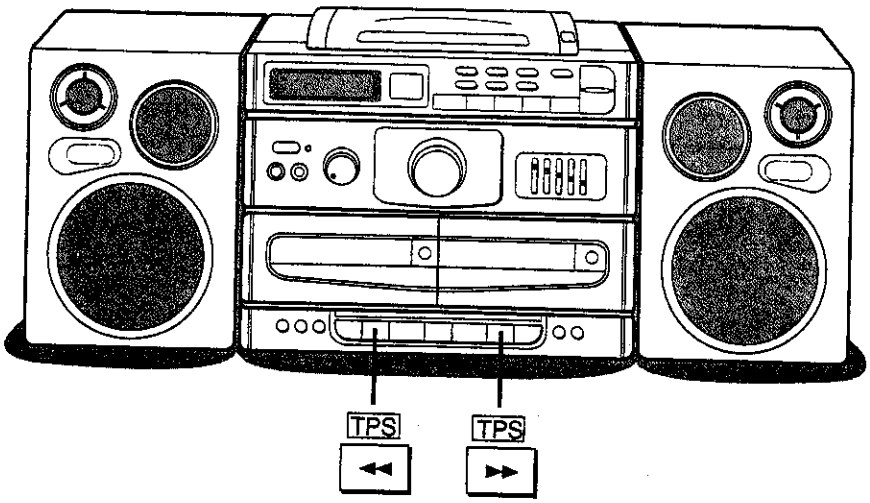
REV

Press FWD ▶ or REV ◀ button to start playback.

To stop play:

STOP

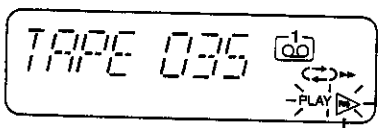
Press the STOP ■ button.



To find the beginning of a program (TPS: tape program sensor)

Press TPS ◄◄ or TPS ►► buttons while the tape is playing.

If the forward side (▷) is playing:
►►: The tape will play from the beginning of the next tune.
◄◄: The tape will rewind to the beginning of the present tune. Then the tune will be play again.



While a TPS operation is taking place, the tape direction indicator and the play indicator will flash.

If the reverse side (◁) of the tape is playing:
The reverse of the above will take place.

Note:
TPS is the function that searches for the silent passages in a tape program. So it may sometimes fail to operate correctly in the following situations:

- When the interval between programs (blank space) is less than 4 seconds.
- When there is a particularly low-level passage or silent passages in the middle of a program.
- When there is no blank space between tape programs (for example, tape recorded from a microphone).
- When the program is less than 10 seconds, or when it is less than 10 seconds from the beginning of the program to the beginning of the next program.
- When a tape recorded with fade-ins or fade-outs.

To fast forward or rewind the tape

Press TPS ◄◄ or TPS ►► buttons while the tape is in the stop mode.

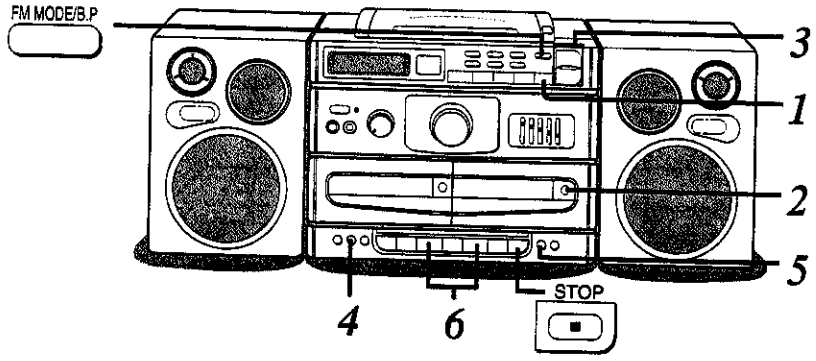
►►: The tape will be fast forwarded.
◄◄: The tape will be rewound.

For your reference:

You can fast forward or rewind the tape while you are playing a tape in another deck. Press DECK SELECT 1/2 to switch to the non playing deck, and then press TPS ◄◄ or TPS ►►. After above operation, be sure to press DECK SELECT 1/2 to select the deck in which you are playing a tape.

Recording Radio Broadcasts

You can use normal and chrome tapes for recording.
The recording level is set automatically.
Any change made to the volume or tone quality during recording will not affect the recording.



- Check that the tape's tabs (see page 35) are intact.
- Take up the leader tape before proceeding. (Refer to bottom right side of this page.)

1 BAND

Press BAND to display "FM" or "AM".

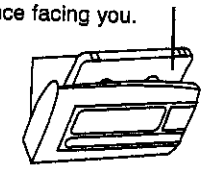
AM → FM

(The display changes each time the button is pressed.)

2 ⏏

Press ⏏ and insert the tape into deck 2.

With the side on which recording is to commence facing you.



3 PRESET TUNING ∧ ∨

Press PRESET TUNING to select the broadcast station.

4 REVERSE MODE

Press REVERSE MODE to select the desired reverse mode.

⇄ : Single-sided recording
⇄) : Two-sided recording (forward side → reverse side)
(⇄) : Same as above (when you press ●II button, "(⇄)" will be automatically switched to ⇄) mode).

5 ●II

Press ●II.

The cassette deck will go into the recording standby state.

6 FWD / or / REV

Press FWD ▶ or REV ◀.

FWD ▶: Recording from the forward side.
REV ◀: Recording from the reverse side.

STOP

To stop recording:
Press STOP ■.

To stop the recording temporarily:
Press ●II.
To resume the recording, press FWD ▶ or REV ◀ corresponding to the direction in which recording is taking place.

When there is too much interference during AM recording:

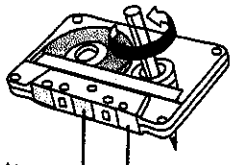
(Available only from the main unit)

FM MODE/B.P

Press FM MODE/B.P.

Select "BP1" or "BP2", whichever yields less noise. (The sound may be interrupted.)

To take up the leader tape:

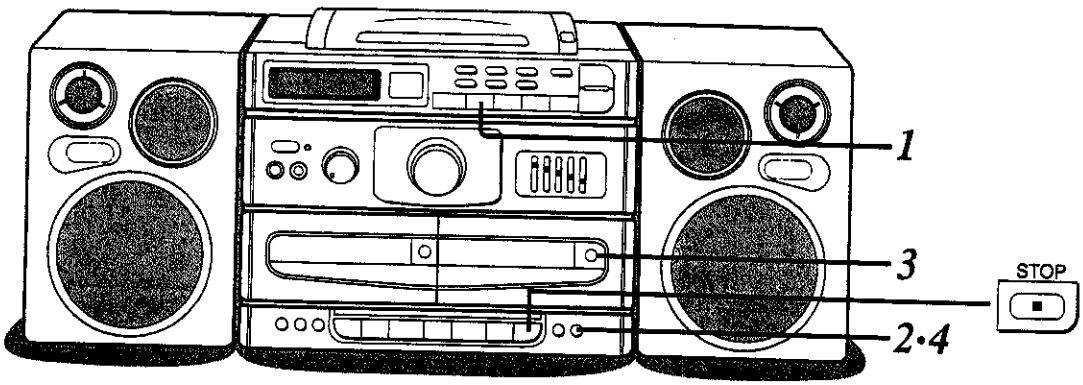


Recording CD

Only normal and chrome tapes can be used.
The recording level is set automatically.
Any change made to the volume or equalizer effect during recording will not affect the recording.

Easy CD recording

All the tracks are recorded in their original sequence onto a single tape. (The reverse mode is automatically set to ⇄>.)
Only part of a track may be recorded at the end of the forward side. This track will be re-recorded in its entirely at the beginning of the reverse side.



- Insert a CD.
- There is no need to take up the leader tape.

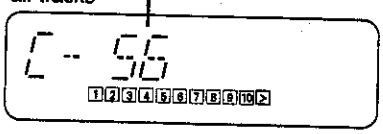
1 ■/CLEAR

Press ■/CLEAR.

2 EASY CD REC

Before inserting the tape:
Press EASY CD REC to find out how long the tape must be to accommodate the recording of all the tracks.

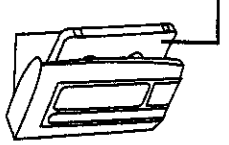
Length of the tape required to record all tracks



3

Press ⏏ and load the tape, which is longer than the length indicated in step 2.

With the side on which recording is to commence facing you.

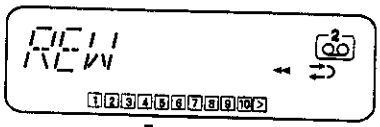


(Example: 60-minutes tape)

4 EASY CD REC

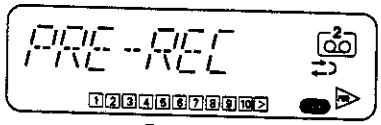
Press EASY CD REC to start recording.
When the button is pressed, the leader tape is rewound and after a 10-second blank is recorded, recording starts.
(The recording level is set automatically.)

Tape now rewinding.

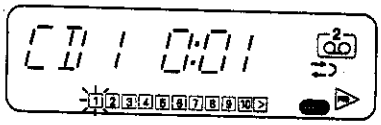


The tape travel direction is automatically set to play the forward side. (The " ▶▶ " display lights.)

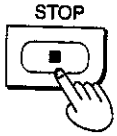
10-second blank now being recorded



Recording starts

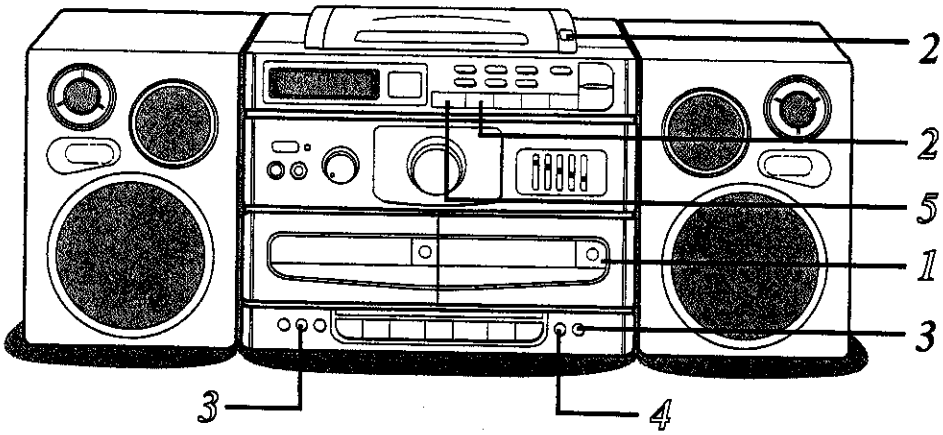


STOP



To stop recording:
Press STOP (■).
The CD play also stops at the same time.

For your reference:
When you intend to record especially important material, ensure you replace worn out batteries beforehand, or simply plug the unit into a household AC outlet.



Recording tracks from several CDs onto a single tape

If there is still room on the tape after one CD has been recorded, the unit will be set to the recording standby mode.

1 **Make a recording from the first CD.**

2 ▲ **Press ▲ and change the CD.**

3 EASY CD REC **Press EASY CD REC.**
Recording now starts from the position on the tape.

When another CD is not going to be recorded in succession, press STOP (■) to release the recording standby mode.

Recording your favourite tracks

After programming your favourite tracks (see steps 1 to 4 on page 15), perform steps 2 to 4 on page 22.

Recording using an alternative method (not easy CD recording)

1 **Press deck 2 (▲) and load the tape with the side to be recorded first facing you.**
Play and find the position on the tape where the recording is to start.
(When recording from the start of side A or B, have the leader tape wound up before proceeding.)

2 ■/CLEAR **Insert the CD and press (■/CLEAR).**

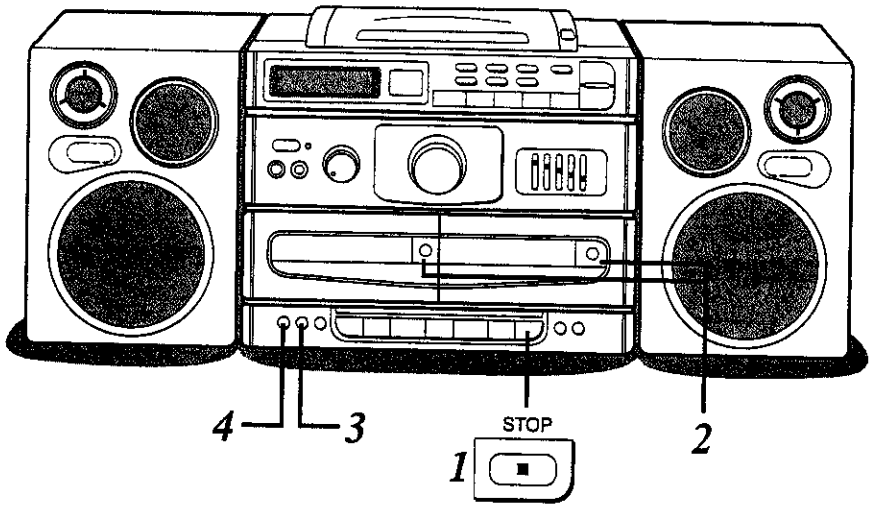
3 REVERSE MODE **Press REVERSE MODE to select the desired reverse mode (see step 4 on page 21).**

4 ●II **Press ●II.**
The cassette deck will go into the recording standby state.

5 ▶/II **Press (▶/II).**
Recording now starts.

Recording Tape to Tape

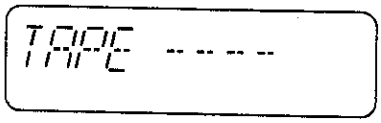
You can use normal and chrome tapes.
The recording level and the noise reduction effect of the original (playback) tape will be recorded on the new tape.



Take up the leader tape before proceeding.
(Refer to bottom right side of this page.)

1 STOP

Press STOP (■) to select TAPE mode.



2

Insert the playback cassette into deck 1 and the cassette you are recording on (the editing tape) into deck 2.

3 REVERSE MODE

Press REVERSE MODE to select the desired mode.

⇄ : Single-sided recording
⇄› : Two-sided recording (forward side → reverse side)
‹⇄› : Same as above (when you press TAPE EDIT, "‹⇄›" will be automatically switched to ⇄› mode).

4 TAPE EDIT

● NORMAL
●● HIGH

Press TAPE EDIT one time for normal speed recording. Press TAPE EDIT twice in succession for high speed recording.

NORMAL: Normal speed recording
HIGH: High speed (about 2 times normal speed) recording.

When the tape length in deck 2 is longer than a tape in deck 1, the deck 2 enters the recording standby state.

To stop the recording:

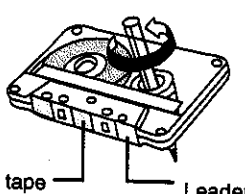
STOP

Press STOP (■).

Notes

- While making a high-speed recording, install the visual unit such as a TV further away from this unit. It prevents noises from being recorded.
- You cannot record with the desired tone quality.

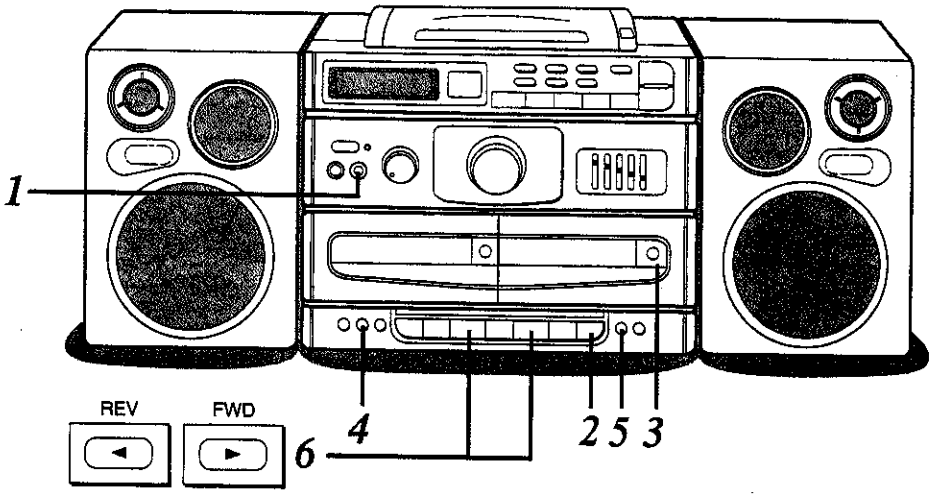
To take up the leader tape:



Magnetic part of tape (sound can be recorded)

Leader tape (sound cannot be recorded)

Recording through the Microphone



1 MIX.MIC

Lower the volume and connect the microphone (not included) to the mixing microphone jack.
(plug type: mini)

2 STOP

Press STOP ■ to select TAPE mode.

3

Press ⏏ button and insert the cassette into Deck 2.

4 REVERSE MODE

Press REVERSE MODE to desired mode.

⇄ : Single-sided recording
⇉ : Two-sided recording (forward side → reverse side)
↻⇄ : Same as above (when you press ●II button, "↻⇄ " will be automatically switched to ⇉ mode).

5 ●II

Press ●II.
The cassette deck will go into the recording standby state.

6 FWD

or REV

Press FWD ▶ or REV ◀ to start recording.
While " ▶▶ " is displayed recording starts from the forward side.
While " ◀◀ " is displayed recording starts from the reverse side.

To stop recording:

STOP

Press STOP ■.

To briefly interrupt recording:

●II

Press ●II.
The cassette deck will go into the recording standby state.

To resume recording:

FWD

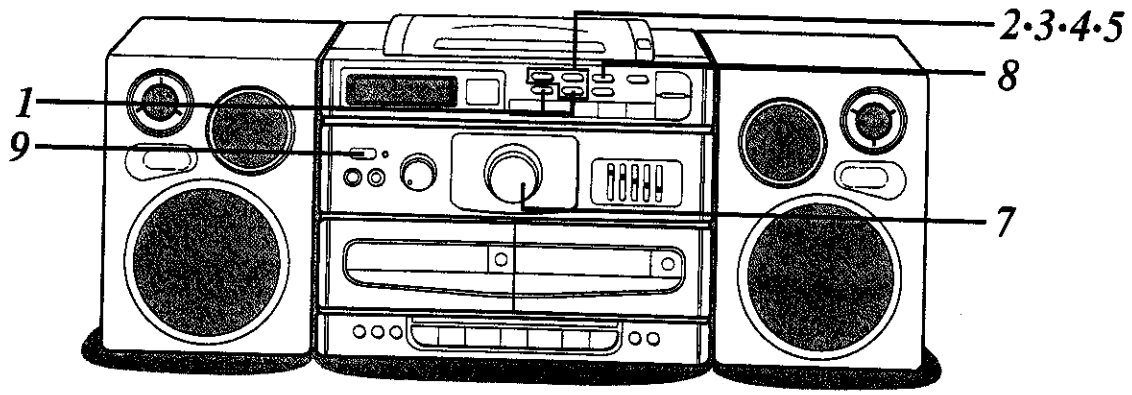
or REV

Press FWD ▶ or REV ◀ corresponding to the direction in which recording is taking place.

Note:
Sound from microphone can also be mixed and recorded with the sound from CD, tape and tuner.

Using the Play Timer

Make sure that you set the clock first. (See page 11.)
The play timer enables you to wake up at the designated time to the sound of a favourite piece of music delivered at the desired volume level.



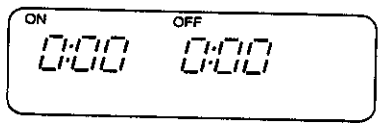
Example: Programming to play a CD from 7.00 to 8:30;

1 TIME CHECK

Press TIME CHECK to display timer ON and OFF time.

Timer ON/OFF times
Original display ← Present time

(The display changes each time the button is pressed.)



MEMORY/ADJUST

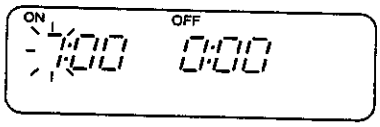
Press MEMORY/ADJUST.

2 –/TUNING/TIME SEARCH/+

[Setting the play start (ON) time]
Press –/TUNING/TIME SEARCH/+ to display "7" for the hour.

0-1-2...6-7-8...23

(The display changes each time the button is pressed.)



MEMORY/ADJUST

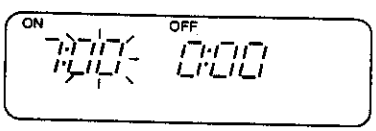
Press MEMORY/ADJUST.

3 –/TUNING/TIME SEARCH/+

Press –/TUNING/TIME SEARCH/+ to display "00" for the minute.

00–01...03...29–30...59)

(The display changes each time the button is pressed.)

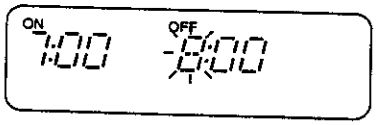


MEMORY/ADJUST

Press MEMORY/ADJUST.

4 –/TUNING/TIME SEARCH/+

[Setting the play end (OFF) time]
Press –/TUNING/TIME SEARCH/+ to display "8" for the hour.

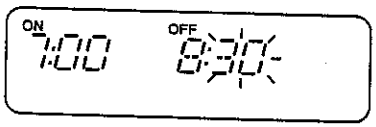


MEMORY/ADJUST

Press MEMORY/ADJUST.

5 –/TUNING/TIME SEARCH/+

Press –/TUNING/TIME SEARCH/+ to display "30" for the minute.



MEMORY/ADJUST

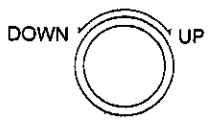
Press MEMORY/ADJUST.

6

Select the sound source to be played.

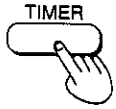
Listening to radio broadcasts:
See page 13 to 14.
Listening to CD:
See page 14 to 17.
Listening to tapes:
See page 18 to 20.

7 VOLUME

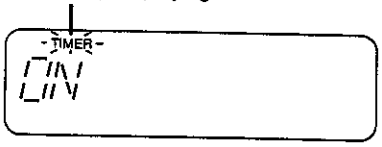


Adjust VOLUME DOWN or UP to set the volume to be heard during play.
The volume level during timer operation is now set.

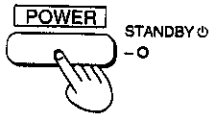
8 TIMER



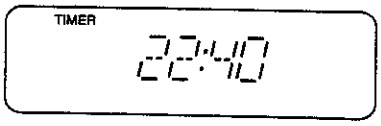
Press TIMER.
Timer play display lights.



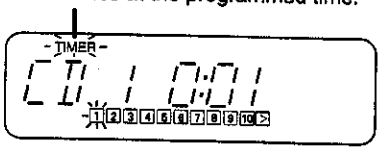
9 POWER STANDBY ⏻



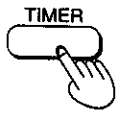
Press POWER to turn the power off.



This flashes at the programmed time.



To release the timer function:



Press TIMER and clear the timer play display.
The OFF display now appears.
The timer does not operate but the time setting is stored in the memory.

To check what has been programmed (when power is OFF):
(Available only the unit is operated on AC power)
Press TIME CHECK.
This display shows the following information each time the button is pressed.
1. Programmed time
2. Programmed source
3. Present time (Original display)

To enjoy play after programming (after step 8):
1. Start playing the desired sound source.
2. After play, turn off the power before time play starts.

Even if you change the volume level or sound source, whatever was programmed is restored at the play time.

Using the timer at the same time every day:
First check that TIMER appears on the display and then turn the power off. Follow the steps 6 to 9 to change the source and volume for the timer function.

To stop the timer in mid-operation:
Turn the power OFF.

Note

The timer will not operate if the power is ON.

To use the sleep timer in conjunction with the play timer

For example, falling asleep while listening to an FM program and waking up the next morning listening to a CD:

1. **Set the timer for playback to listen to the CD (steps 1 to 8 on pages 26 and 27).**
2. **Listen to the radio.**
3. **Operate the sleep timer (see page 30).**

Note

You cannot make a different CD program setting (see page 15) for the play timer playback and sleep timer.

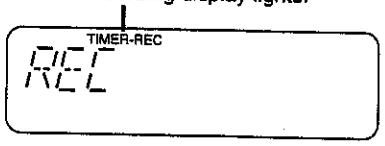
For your reference:

Even if the volume is changed for the sleep timer, the sound will be heard while the timer play is operating at the volume which was adjusted when setting the timer play.

7 TIMER

Press TIMER, and press it again while "TIMER-REC" is displayed.

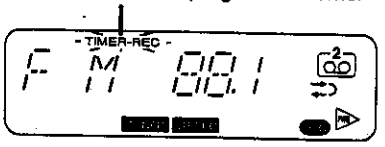
Timer recording display lights.



8 POWER STANDBY

Press POWER to turn the power off.

This flashes at the programmed time.



To release the timer function:

TIMER

Press TIMER and clear the timer recording display.
The OFF display now appears.
The timer does not operate but the time setting is stored in the memory.

To check what has been programmed (when power is OFF):
(Available only when the unit is operated on AC power)
Press TIME CHECK.
This display shows the following information each time the button is pressed.
1. Programmed time
2. Programmed source
3. Present time (original display)

To enjoy play after programming (after step 7):
1. Start playing the desired sound source.
2. After play, turn off the power before timer recording starts.

Even if you change the volume level or sound source, whatever was programmed is restored at the recording time.

Using the timer at the same time every day:
Press TIMER to light TIMER-REC on the display then turn the power off. Follow steps 6 to 8 to change the source and volume for the timer function.

To stop the timer in mid-operation:
Turn the power off.

Note

- The timer will not operate if the power is on.
- The recording timer is released after the programmed recording has performed.

To use the sleep timer in conjunction with the record timer

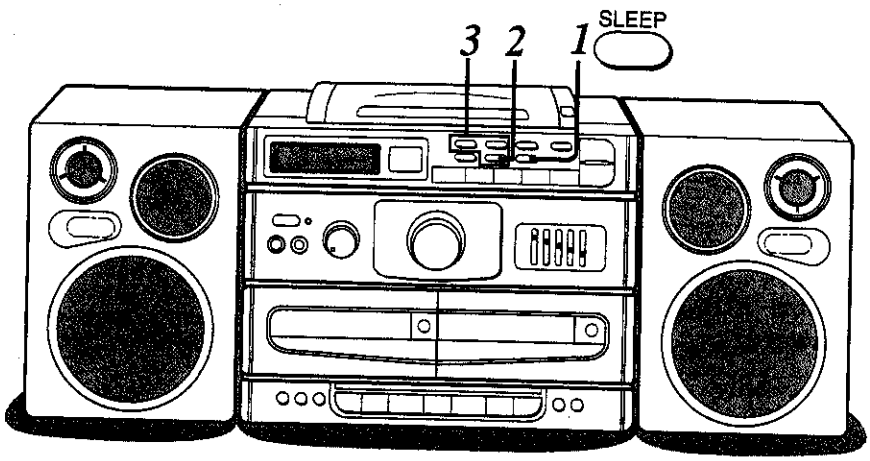
For example, falling asleep while listening to a CD and subsequently recording a late-night program:

1. **Set the timer for recording (steps 1 to 7 on pages 28 and 29).**
2. **Play the CD.**
3. **Operate the sleep timer (see page 30).**

(Set the sleep timer so that the power is turned off before the start of the timer recording.)

Using the Sleep Timer Function

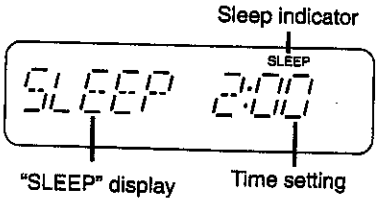
The power-off time can be set up to 120 minutes ahead of the present time.



While the desired sound source is playing:

Press SLEEP to operate the sleep timer function.

The original display is restored after "SLEEP" has appeared, and the power is turned off after the time set has elapsed.



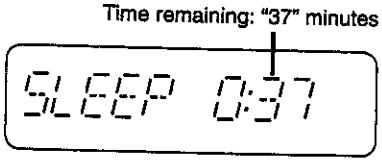
To release the sleep timer function:

Press SLEEP and press again while "SLEEP" is displayed.

The time setting will remain stored in the memory.

To check the timer remaining during operation:

Press SLEEP.



To change the time remaining during operation:

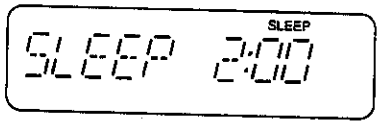
1. Press SLEEP.
2. Press –/TUNING/TIME SEARCH/+ while the time remaining is indicated (about 10 seconds) to change the time.
   The changed time is not stored in the memory. When you use the sleep timer function the next time, the original time prior to the change remains programmed.

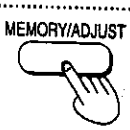
To change the sleep timer's time setting

(Available only from main unit.)

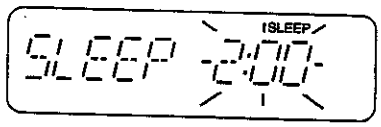
1

Press SLEEP.



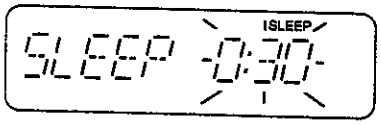
2 

Press MEMORY/ADJUST.



3

Press –/TUNING/TIME SEARCH/+ to display the desired time.

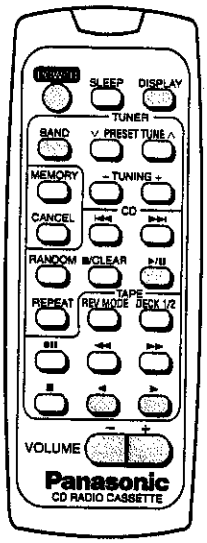


Press MEMORY/ADJUST.

For your reference:

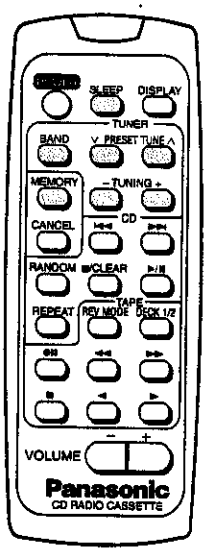
Once a particular time is set, it will remain stored in the memory until it is changed.

Quick Reference of Remote Control Operations



Common operations

Turning the power ON/OFF (when using the battery power, you can only turn off.)	POWER
Adjusting the volume	VOLUME − +
Selecting the display (See page 11.)	DISPLAY
One-touch play (See page 9.)	(Radio) BAND, (CD) ▶/II, (Tape) ◀, ▶



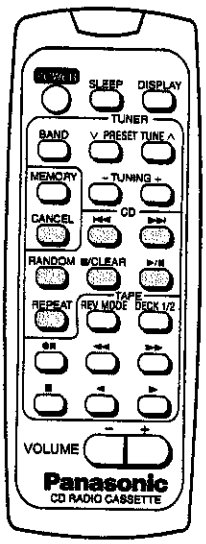
Timer operations

Setting/releasing the sleep timer (See page 30.)	SLEEP

Tuner operations

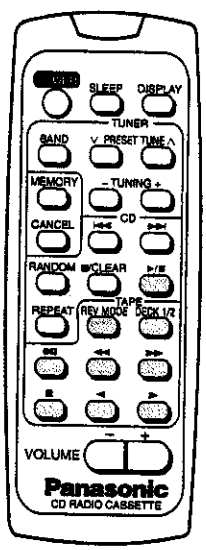
Listening to a programmed radio station (See page 13.)	BAND ➡ ∨ PRESET TUNE ∧
Listening to a radio station which has not been programmed (See page 14.)	BAND ➡ − TUNING +
Programming Broadcast station (See page 12.)	BAND ➡ − TUNING + ➡ MEMORY ➡ − TUNING + ➡ MEMORY

Quick Reference of Remote Control Operations



CD operations

Starting play (See page 14.)	▶/II
Temporarily stopping play (See page 14.)	▶/II
Stopping play (See page 14.) To clear program play (See page 15.)	■/CLEAR
To skip tracks (See page 17.)	⏮ ⏭
To search forward or backward (See page 17.)	⏮ ⏭
Listening to favourite tracks (See page 17.)	■/CLEAR → ⏮ ⏭ → ▶/II
Listening to a track repeatedly (See page 16.)	REPEAT
Listening to tracks at random (See page 16.)	■/CLEAR → RANDOM
To erase last programmed track (See page 15.)	CANCEL

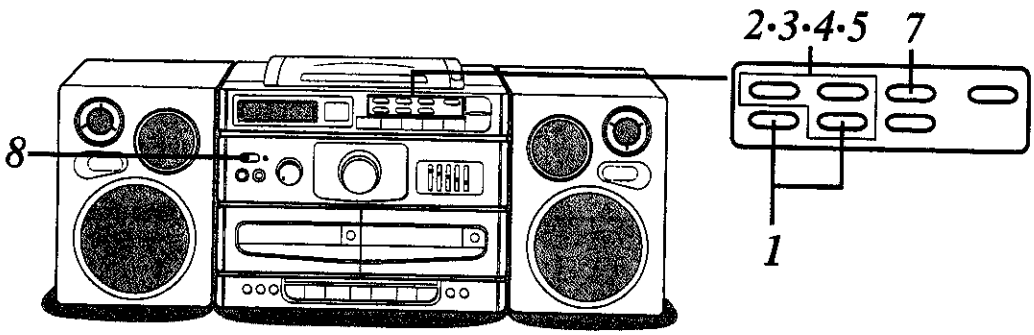


Tape operations

Starting play (See page 18.)	◀ ▶
Changing the direction (See page 18.)	◀ ▶
Fast forwarding (See page 20.)	▶▶
Rewinding (See page 20.)	◀◀
Stopping play (See page 18.)	■
Recording (See page 24.)	●II → ◀ ▶/▶/II
Selecting the reverse mode (See page 18.)	REV MODE
Selecting Deck 1 or 2 (See page 19.)	DECK 1/2

Using the Record Timer

Make sure that you set the clock first. (See page 11.)
The recording timer makes it possible to record desired radio program at the designated time.



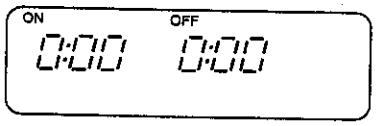
Example: Programming to record a program from 13:00 to 14:30;

1 TIME CHECK

Press TIME CHECK to display TIMER ON time.

Timer ON/OFF times
Original display ← Present time

(The display changes each time the button is pressed.)



MEMORY/ADJUST

Press MEMORY/ADJUST.

2 –/TUNING/TIME SEARCH/+

[Setting the recording start (ON) time]
Press –/TUNING/TIME SEARCH/+ to display "13" for the hour.

0-1-2...12-13-14...23

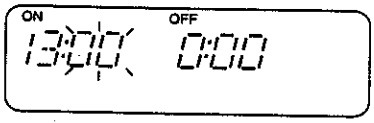
(The display changes each time the button is pressed.)

MEMORY/ADJUST

Press MEMORY/ADJUST.

3 –/TUNING/TIME SEARCH/+

Press –/TUNING/TIME SEARCH/+ to display "00" for the minute.

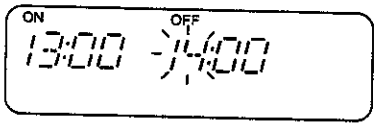


MEMORY/ADJUST

Press MEMORY/ADJUST.

4 –/TUNING/TIME SEARCH/+

[Setting the recording end (OFF) time]
Press –/TUNING/TIME SEARCH/+ to display "14" for the hour.



MEMORY/ADJUST

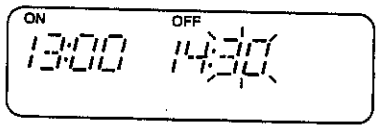
Press MEMORY/ADJUST.

5 –/TUNING/TIME SEARCH/+

Press –/TUNING/TIME SEARCH/+ to display "30" for the minute.

00–01...03...29...30...59

(The display changes each time the button is pressed.)



MEMORY/ADJUST

Press MEMORY/ADJUST.

6

Prepare to record the program.

1. Insert the tape with the side to start recording facing you.
2. Select the broadcasting station. (See pages 13 to 14.)

Turn down the volume if you do not wish to hear the sound during the recording.
(This will not affect the recording level.)

Troubleshooting Guide

Before requesting service for this unit, check the chart below for a possible cause of the problem you are experiencing. Some simple checks or a minor adjustment on your part may eliminate the problem and restore proper operation.
If you are doubt about some of the check points, or if the remedies indicated in the chart do not solve the problem, refer to the directory of Authorized Service Centers (enclosed with this unit) to locate a convenient service center, or consult your dealer instructions.

Problem	Probable cause(s)	Suggested Remedy
Common problems		
No operations. (When the batteries are used as the power source.)	Is the AC power cord still connected to the unit while the batteries are being used?	Disconnect the AC power cord.
	Are the batteries flat?	Replace them with new ones. Alternatively, use a household AC outlet as the power source.
	Have the batteries been installed incorrectly with their (+) and (–) polarities reversed?	Align the (+) and (–) polarities correctly.
"ERROR" appears.	Have you made a mistake operation?	Read the operating instruction and try again.
"U01" appears.	The batteries are flat.	Replace them with new ones. Alternatively, use a household AC outlet as the power source.
"U02" appears.	Preparation have not been made to supply power to the unit.	Install the batteries or connect the AC power cord.
While listening to CD		
Play does not start. No display of track numbers, etc.	Has the CD been installed upside down?	Install the CD with the label side facing up.
	Has condensation formed on the units CD section?	Turn the unit on and leave it on for about an hour before further operation.
Certain sections are not played properly.	Is the CD dirty?	Wipe it with a soft cloth.
	Is the CD scratched?	Replace with a new CD.
While listening to tape		
No recording.	Have the tape's erase-prevention tabs been removed?	Cover the holes with adhesive tape.
High level of noise; poor sound quality.	Are the heads dirty?	Clean them.
	Have the heads been magnetized?	Demagnetize them using a demagnetizer available from an audio store.
While listening to the radio		
High level of noise; stations cannot be tuned in well.	Has the antenna been adjusted properly?	Try changing its direction.
Noise heard during AM reception.	Are you using a remote control for other appliance near the unit?	Use the remote control at a distance.
	Are you operating the unit and a TV set at the same time?	Place the unit at a distance from the TV. Alternatively, turn off the TV's power.
While using the remote control		
No operation.	Are the batteries flat?	Replace them with new ones.
	Have the batteries been installed incorrectly with their (+) and (–) polarities reversed?	Align the (+) and (–) polarities correctly.
	Is the remote control's transmitter pointed at the unit's sensor?	Check whether anything is obstructing the path between the two and point the remote control squarely at the unit's sensor and operate.
	Is the unit's sensor exposed to direct sunlight or strong fluorescent light?	Shield the sensor from strong sources of light.

Troubleshooting Guide

Problem	Probable cause(s)	Suggested Remedy
While using the timer		
No timer operation at the programmed time.	Is the unit on (when the play timer and recording timer are being used)?	Turn off the unit upon completion of the settings.
	Has the programmed timer indicator (TIMER, TIMER-REC or SLEEP) lighted?	Operate again so that the display lights up.

About condensation

"Condensation" refers to the droplets of water which form, for example, on a cold winter's day on the window panes in a warm room.
This unit contains a lens in the CD section, and condensation may form on it in the following cases.

- Immediately after the heating has been turned on in the room
- In a steamy or very humid room
- When the unit is suddenly moved from a cold environment to a warm environment

In cases like these, the unit may not function properly. Turn the unit on and wait about an hour before attempting any further operations.

Maintenance

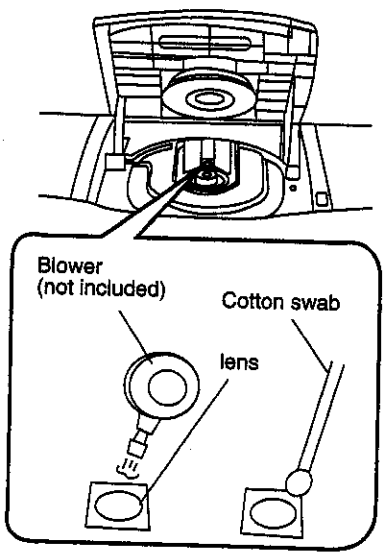
Maintenance of external surfaces

To clean this unit, use a soft, dry cloth.
If the surfaces are extremely dirty, use a soft cloth dipped in a soap-and-water solution or a weak detergent solution.

Wring the cloth well before wiping the unit.
Wipe once again with a soft, dry cloth.
Never use alcohol, paint thinner, benzine, or chemically treated cloths to clean this unit. Such chemicals may damage the finish of your unit.

Lens care

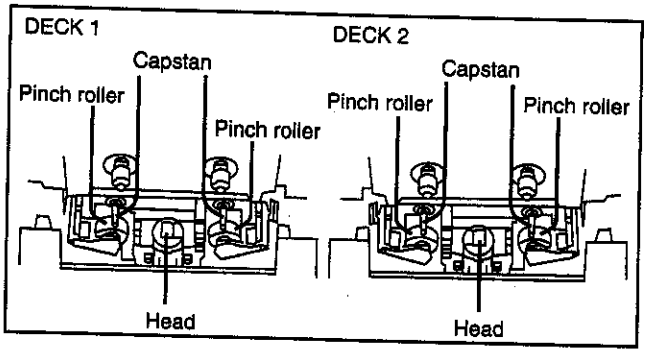
Open the CD lid and clean the lens with a blower (not included).
If the lens is extremely dirty, clean it with a cotton swab.



Tape head care

To assure sound quality for recording and playback, be sure to clean the tape heads after approximately every 10 hours of use.

1. Press POWER to turn the unit off.
2. Press ⏏ to open the cassette holder.
3. Clean the tape heads, pinch rollers and the capstan shafts with a cotton swab (or a soft, lint-free cloth) slightly moistened with isopropyl alcohol.
   Do not use any solution other than alcohol for head cleaning.



Head demagnetization

In order to maintain good sound quality, it is recommended that the head assembly be demagnetized when distortion or poor sound quality persists after cleaning the head. If the head assembly becomes magnetized, it could create loss of high-frequency response.

Several types of head demagnetizer are available and may be purchased separately at local electronics supply stores. Follow the instructions that are supplied with the device.

Do not bring any type of metal objects or tools such as magnetic screwdrivers in contact with the head assembly.

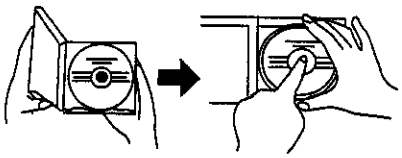
Concerning Compact Discs

Only compact discs having this mark can be used with this unit.

COMPACT disc DIGITAL AUDIO

To remove a disc from its case

Press the center holder and lift the disc holding by the edges.



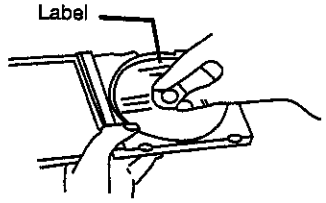
To hold the disc

Hold the disc by the edges so the surface is not soiled with fingerprints.
Fingerprints, dirt and scratches can cause skipping and distortion.

(Correct) (Incorrect)

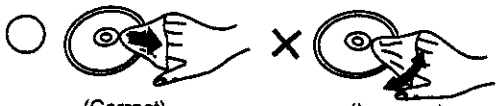
To store a disc in its case

Insert the disc label facing upwards and press downward at the center.



If the surface is soiled

Wipe gently with a soft, damp (water only) cloth.



(Correct) (Incorrect)

If the disc is brought from a cold to a warm environment, moisture may form on the disc

Wipe this moisture off with a soft, dry lint-free cloth before using the disc.

Improper tape storage:

You can damage discs if you store them in the following places;
- Areas exposed to direct sunlight.
- Humid or dusty areas.
- Areas directly exposed to a heat outlet or heating appliance.

Handling precautions:

- Do not write on the label side with a ball-point pen or other writing utensils.
- Do not use record cleaning sprays, benzine, thinner, static electricity prevention liquids or any other solvent.
- Do not soil with fingerprints.

Concerning Cassette Tapes

Selection of cassette tapes

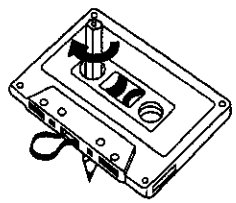
Cassette tape exceeding 90 minutes:
These tapes are handy for their long playback and recording time but be careful about repeatedly stopping and starting, rewinding and fast forwarding these tapes in short intervals as they are thin, tend to stretch and may become entangled in the deck mechanism.

Endless tapes

Failure to operate these correctly may cause the tape to wind around the revolving parts.

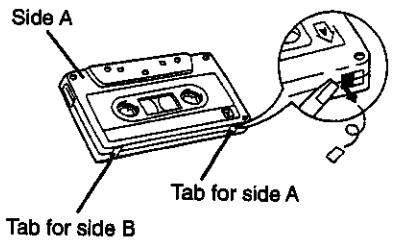
If the tape loosen, take up the slack

Tape slack may cause the tape to break.

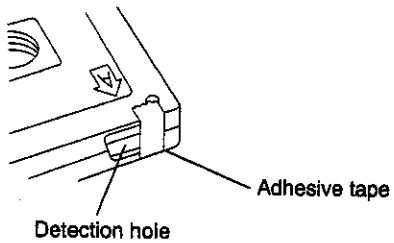


To prevent erasure of recorded sounds

Remove the erase-prevention tabs with a screwdriver or a similar object.



To re-record on a protected cassette, cover the slot with adhesive tape.



- Do not cover the detection holes on chrome and metal tapes.

Improper tape storage:

You can damage tapes if you store them in the following places:
- In high temperature [35°C (95°F) or higher] or high humidity (80% or higher) areas.
- In a strong magnetic field (near a speaker, on top of a TV, etc.) This can erase a recording.
- Areas exposed to direct sunlight.

Technical Specifications

Radio

Frequency	
AM	522-1611 kHz (9 kHz step)
FM	87.5-108 MHz (100 kHz step)

CD player

Sampling frequency	44.1 kHz
Decoding	16 bit linear
Beam source	Semiconductor laser (wavelength 780 nm)
No. of channels	2 channel, stereo
Frequency response	20 Hz-20 kHz (+1, −2 dB)
Wow and flutter	Less than possible measurement data
D/A converter	MASH (1 bit DAC)

Tape recorder

Track system	4 track, 2 channel, stereo
Recording system	AC bias
Erasing system	AC erase
Monitor system	Variable sound monitor
Frequency range	
Normal	20-16000 Hz
CrO_2	20-17000 Hz

General

Power requirement	
AC	230-240 V, 50 Hz, Power consumption: 90 W
Battery	15 V (Ten UM-1, R20/LR20 batteries)
Memory back-up for computer/clock	6 V (Four UM-3 size, R6/LR6 batteries)
Power output	120 W (50 W × 2 + 10 W × 2)...PMPO
Speakers	2-Woofers; 12 cm (5") 2-Squawkers; 8 cm (3") 2-Tweeters; 1.5 cm (5/16")
Jacks	
Input	MIX MIC; 2 mV (600Ω)
Output	Speaker; woofer (6-16Ω) Squawker (6-16Ω) Headphones; 32Ω
Dimensions (W×H×D)	642 × 267 × 231 mm Main unit; 313 × 267 × 231 mm Speaker box; 174 × 254 × 190 mm
Weight:	9 kg without batteries

Note:
Specifications are subject to change without notice.
Weight and dimensions are approximate.

MASH is a trademark of NTT.

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